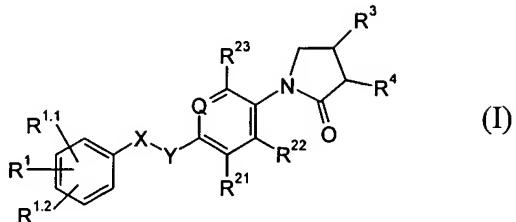


Claims

1. A compound of the formula I



wherein

Q is =N- or =C(R²⁴)-;

X-Y is -CH₂-CH₂-, -CH=CH- or -CH₂-O-;

R¹, R^{1.1} and R^{1.2} independently from each other are selected from the group consisting of hydrogen, halogen, halogen-(C₁-C₆)-alkyl, cyano, (C₁-C₆)-alkoxy or halogen-(C₁-C₆)-alkoxy;

R²¹, R²² and R²³ independently from each other are selected from the group consisting of hydrogen and halogen;

R²⁴ is hydrogen, halogen or methyl;

R³ is -NHR⁶;

R⁴ is hydrogen; and

R⁶ is -C(O)H, -C(O)-(C₁-C₃)-alkyl, C(O)-halogen-(C₁-C₃)alkyl, -C(O)O(C₁-C₃)-alkyl, -C(O)NH₂ or -SO₂-(C₁-C₃)-alkyl;

or an individual isomer or racemic or non-racemic mixture thereof.

2. A compound of claim 1 wherein Q is =C(R²⁴)-.

3. A compound of claim 2 wherein R²⁴ is hydrogen; X-Y is -CH₂-O-; R^{1.1} and R^{1.2} are hydrogen; R¹ is hydrogen or halogen; R²¹, R²², and R²³ are hydrogen; R⁴ is hydrogen, and R³ is NHR⁶.

4. A compound of claim 3 wherein R⁶ is C(O)H, C(O)CH₃, C(O)CH₂F, C(O)CHF₂, C(O)CF₃, C(O)OCH₃, C(O)NH₂, or SO₂CH₃.

5. A compound of claim 1 wherein Q is =CH-, =CF-, or =C(CH₃)-.
6. A compound of claim 1 wherein Q is =N-.
7. A compound of claim 1 wherein X-Y is -CH₂-O-.
8. A compound of claim 1 wherein X-Y is -CH₂-CH₂- or -CH=CH-.
9. A compound of claim 1 wherein R¹, R^{1.1}, and R^{1.2} independently are selected from the group consisting of hydrogen, halogen, cyano, methyl, halogenmethyl, methoxy or halogenmethoxy.
10. A compound of claim 1 wherein R¹, R^{1.1}, and R^{1.2} are halogen.
11. A compound of claim 10 wherein R¹, R^{1.1}, and R^{1.2} are fluoro.
12. A compound of claim 11 wherein R¹, R^{1.1}, and R^{1.2} are 2,4,6-trifluoro, 2,4,5-trifluoro, 2,3,6-trifluoro, 2,3,4-trifluoro, or 3,4,5-trifluoro.
13. A compound of claim 1 wherein R^{1.2} is hydrogen and R¹ and R^{1.1} independently from each other are selected from the group consisting of hydrogen, halogen, cyano, (C₁-C₆)-alkyl, halogen-(C₁-C₆)-alkyl, (C₁-C₆)-alkoxy or halogen-(C₁-C₆)-alkoxy.
14. A compound of claim 13 wherein R¹ and R^{1.1} independently are halogen or (C₁-C₆)-alkyl.
15. A compound of claim 14 wherein R^{1.1} is halogen and R¹ is halogen or (C₁-C₆)-alkyl.

16. A compound of claim 1 wherein R¹, R^{1.1} and R^{1.2} are hydrogen.

17. A compound of claim 1 wherein R^{1.1} and R^{1.2} are hydrogen and R¹ is selected from the group consisting of hydrogen, halogen, cyano, (C₁-C₆)-alkyl, halogen-(C₁-C₆)-alkyl, (C₁-C₆)-alkoxy or halogen-(C₁-C₆)-alkoxy.

18. A compound of claim 17 wherein R¹ is halogen or (C₁-C₆)-alkyl.

19. A compound of claim 17 wherein R¹ is selected from the group consisting of hydrogen, halogen, cyano, methyl, halogenmethyl, methoxy or halogenmethoxy.

20 A compound of claim 19 wherein R¹ is halogenmethoxy.

21. A compound of claim 20 wherein R¹ is 3-trifluoromethoxy.

22. A compound of claim 19 wherein R¹ is fluoro.

23. A compound of claim 22 wherein R¹ is 3-fluoro or 4-fluoro.

24. A compound of claim 19 wherein R¹ is methyl.

25. A compound of claim 24 wherein R¹ is 4-methyl.

26. A compound of claim 19 wherein R¹ is chloro.

27. A compound of claim 26 wherein R¹ is 3-chloro.

28. A compound of claim 19 wherein R¹ is CN.

29. A compound of claim 19 wherein R¹ is halogenmethyl.

30. A compound of claim 29 wherein R¹ is 3-trifluoromethyl.

31. A compound of claim 19 wherein R¹ is methoxy.

32. A compound of claim 31 wherein R¹ is 2-methoxy, 3-methoxy, or 4-methoxy.

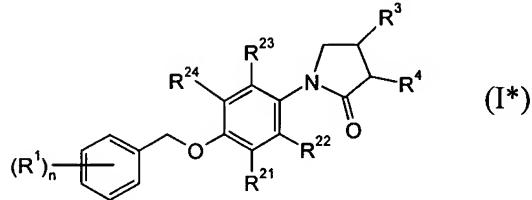
33. A compound of claim 1 wherein R²¹, R²² and R²³ are hydrogen.

34. A compound of claim 1 wherein R²⁴ is hydrogen.

35. A compound of claim 1 wherein R³ is -NHR⁶ wherein R⁶ is -C(O)H, -C(O)-CH₃, -C(O)-CH₂F, -C(O)-CHF₂, -C(O)-CF₃, -C(O)O-CH₃, -C(O)-NH₂ or -SO₂-CH₃.

36. A compound of claim 1 wherein the compound has (S)-configuration.

37. A compound of the formula I*



wherein

R¹ is halogen, halogen-(C₁-C₆)-alkyl, cyano, (C₁-C₆)-alkoxy or halogen-(C₁-C₆)-alkoxy;

R²¹, R²², R²³ and R²⁴ independently from each other are selected from the group consisting of hydrogen and halogen;

R³ is -NHR⁶;

R⁴ is hydrogen;

R⁶ is -CO-(C₁-C₃)-alkyl or -SO₂-(C₁-C₃)-alkyl; and

n is 0, 1, 2 or 3;

or an individual isomer or a racemic or non-racemic mixture thereof.

38. A compound of claim 37 wherein R³ is NHR⁶; R⁶ is -CO-(C₁-C₆)-alkyl or -SO₂-(C₁-C₆)-alkyl; and R⁴ is hydrogen.

39. A compound of claim 37 wherein n is 1 or 2.

40. A compound of claim 37 wherein n is 0 or 1.

41. A compound of claim 37 wherein n is 1.

42. A compound of claim 37 wherein R¹ is halogen or halogen-(C₁-C₆)-alkyl.

43. A compound of claim 42 wherein R¹ is fluoro, chloro, or trifluoromethyl.

44. A compound selected from the group consisting of

(RS)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,

(S)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,

(R)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,

(RS)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-formamide,

(S)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-formamide,

(R)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-formamide,

(RS)-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-carbamic acid methyl ester,

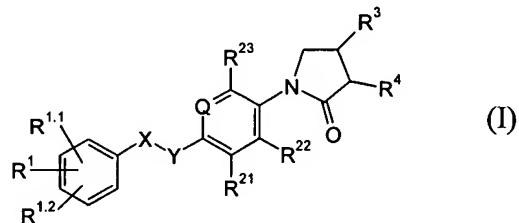
(RS)-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-urea, and

(RS)-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-methanesulfonamide.

45. A compound selected from the group consisting of
 (S)-2-fluoro-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (S)-2,2-difluoro-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (S)-2,2,2-trifluoro-N-{1-[4-(3-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (RS)-N-{1-[4-(4-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (R)-N-{1-[4-(4-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (S)-N-{1-[4-(4-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (RS)-N-{1-[4-(4-fluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-formamide,
 (RS)-N-[1-(4-benzyloxy-phenyl)-5-oxo-pyrrolidin-3-yl]-acetamide, and
 (RS)-N-{1-[4-(2-fluoro-benzyloxy-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide.

46. A compound selected from the group consisting of
 (RS)-(E)-N-(1-{4-[2-(3-fluoro-phenyl)-vinyl]-phenyl}-5-oxo-pyrrolidin-3-yl)-acetamide,
 (RS)-N-(1-{4-[2-(3-fluoro-phenyl)-ethyl]-phenyl}-5-oxo-pyrrolidin-3-yl)-acetamide,
 (RS)-N-{1-[6-(4-fluoro-benzyloxy)-pyridin-3-yl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (S)-N-{1-[4-(3-chloro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (S)-N-{1-[4-(2,6-difluoro-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl} acetamide,
 (S)-N-{5-oxo-1-[4-(2,4,6-trifluoro-benzyloxy)-phenyl]-pyrrolidin-3-yl}-acetamide,
 (S)-N-{1-[4-(3-methoxy-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide,
 (S)-N-{5-oxo-1-[4-(4-trifluoromethyl-benzyloxy)-phenyl]-pyrrolidin-3-yl}-acetamide,
 (S)-N-{1-[4-(4-methyl-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide, and
 (S)-N-{1-[4-(3-cyano-benzyloxy)-phenyl]-5-oxo-pyrrolidin-3-yl}-acetamide.

47. A composition comprising a compound of formula I



wherein

Q is =N- or =C(R²⁴)-;

X-Y is -CH₂-CH₂-, -CH=CH- or -CH₂-O-;

R¹, R^{1.1} and R^{1.2} independently from each other are selected from the group consisting of hydrogen, halogen, halogen-(C₁-C₆)-alkyl, cyano, (C₁-C₆)-alkoxy or halogen-(C₁-C₆)-alkoxy;

R²¹, R²² and R²³ independently from each other are selected from the group consisting of hydrogen and halogen;

R²⁴ is hydrogen, halogen or methyl;

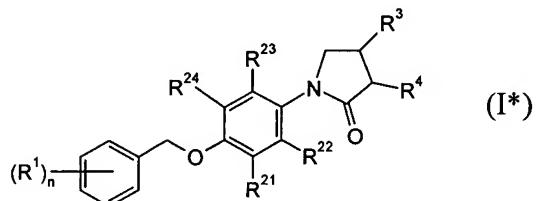
R³ is -NHR⁶;

R⁴ is hydrogen; and

R⁶ is -C(O)H, -C(O)-(C₁-C₃)-alkyl, C(O)-halogen-(C₁-C₃)alkyl, -C(O)O(C₁-C₃)-alkyl, -C(O)NH₂ or -SO₂-(C₁-C₃)-alkyl;

or an individual isomer or racemic or non-racemic mixture thereof, and a pharmaceutically acceptable carrier.

48. A composition comprising a compound of formula I*



wherein

R¹ is halogen, halogen-(C₁-C₆)-alkyl, cyano, (C₁-C₆)-alkoxy or halogen-(C₁-C₆)-alkoxy;

R²¹, R²², R²³ and R²⁴ independently from each other are selected from the group consisting of hydrogen and halogen;

R³ is -NHR⁶;

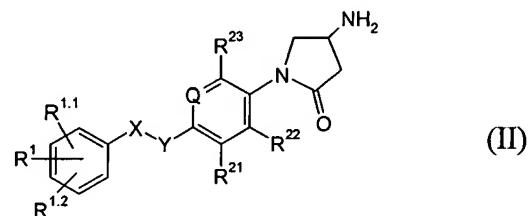
R⁴ is hydrogen;

R⁶ is -CO-(C₁-C₃)-alkyl or -SO₂-(C₁-C₃)-alkyl; and

n is 0, 1, 2 or 3;

or an individual isomer or racemic or non-racemic mixture thereof, and a pharmaceutically acceptable carrier.

49. A process for the preparation of compounds of formula I according to claim 1 comprising reacting a compound of formula II



with an isocyanate or an acyl donating agent of formula Z-C(O)-(C₁-C₃)-alkyl, Z-C(O)-halogen-(C₁-C₃)alkyl, Z-C(O)O(C₁-C₃)-alkyl, or Z-SO₂-(C₁-C₃)-alkyl wherein Z is an activating group.

50. A method for the treatment of Alzheimer's disease comprising administering to an individual a therapeutically effective amount of a compound of claim 1.

51. A method for the treatment of senile dementia comprising administering to an individual a therapeutically effective amount of a compound of claim 1.